

DELANO MUNICIPAL UTILITIES (DMU)

REQUEST FOR PROPOSAL

Electrical Engineering Study

OVERVIEW

Delano Municipal Utilities (DMU) is a water and electric utility serving approximately 3,000 customers in central Minnesota. DMU operates a power plant capable of producing 24MW of energy distributed to our customers via eight underground (URD) primary feeders. DMU operates a double-ended substation with two 69KV transmission ties to Xcel Energy. Delano is connected to Xcel Energy's transmission grid via three available transmission lines.

Due to its proximity to the Twin Cities metropolitan area, Delano has experienced dynamic growth in both residential and commercial electric accounts. DMU seeks a qualified engineering firm to assist with the transmission, distribution and generation environment associated with a public power utility. This assistance shall come in the form of strategic planning, vulnerability assessments and compliance with best practices of operations and maintenance of an underground distribution utility.

The qualified firm will demonstrate how a thorough distribution study shall serve as the baseline for a strategic plan at the electric utility. The details provided by this study will become elements of prioritization in all future projects as well as serve as a decision matrix for ongoing capital planning.

The Objectives

- Objective #1: improve the overall efficiency and reliability of the distribution system.
- Objective #2: provide a strategic plan for capital investment.
- Objective #3: provide a benchmark to address technology, innovation and sustainability.

The Opportunity

- Goal #1: Provide comprehensive engineering study of distribution system.
- Goal #2: Provide protective device coordination and system stability model.
- Goal #3: Provide as-built drawings of generating, sub-station and distribution assets.
- Goal #4: Utilize and improve existing GIS database.
- Goal #5: Provide load flow and short circuit analysis.
- Goal #6: Provide detailed equipment condition assessment.
- Goal #7: Provide testing service and retro-commission of major distribution assets.

Technical/Project Approach

The qualified firm will have staff within reasonable distance of Delano, MN in order to travel and occasionally work on site to collect data and provide thorough examination of our distribution system. The data will then be used as the basis for a qualitative analysis on the existing system as well as the basis for digital modeling.

The data will be input into a software package used for system analysis and digital modeling of the entire distribution system. This software model will provide reliability analysis on DMU's system including, but not limited to, conductors, transformers, relaying equipment, fuses and circuit breakers. The digital model will also be used for contingency studies on multiple feeders in the event of an outage or load-shedding operation. The software model can also be used to facilitate growth and development in DMU service territory.

Software modeling shall be equal to:

ETAP www.etap.com

Milsoft www.milsoft.com

PSS www.siemens.com

Project Deliverables

Following is a partial list of project deliverables:

Deliverable	Description
Inspection & data collection	Visit all assets to examine and collect nameplate information
Digital modeling	Conduct software analysis for contingency and event study
Engineering study	Interpret and analyze digital model for structured strategic plan
GIS input	Collect outstanding geospatial information missing from database
Load balancing study	Determine electrical flows and appropriate balancing methods
Phase identification	Determine and identify phases on system
Fusing coordination	Provide proper fusing coordination documentation
Fault indication	Provide design assistance regard visual fault indicators
Update CAD drawings	Update all existing as-built system and control drawings

Timeline for Execution

Key projects are outlined below. Dates are best-guess and subject to change.

Description	Start Date	End Date	Duration
Project Start	July 2019	n/a	n/a
Site visits and initial assessment	August 2019	September 2019	60 days
Digital modelling	September 2019	November 2019	60 days
Engineering analysis FINAL	July 2019	November 2019	150 days
Update existing drawings	July 2019	December 2019	180 days
Other projects as required...	July 2019	n/a	n/a

EXPECTED RESULTS

Technical Benefits

- Improved workflow efficiency and overall responsiveness of staff.
- Fewer outages / higher reliability.
- Strategic and master plan for growth.
- Updated maps and as-built database

Other Benefits

- Improved capital planning and budgeting tool.
- Framework for all future planning.

PRICING

The following table outlines the services listed above. Bidders are encouraged to submit total price in a fashion which line-items all project deliverables. Bidders may submit bids in a fashion which suits them most effectively.

Primary Services Cost	Price
Inspection, collection, modeling and engineering study	
Load balance, phase ID, fusing coordination study	
Secondary Services Cost	
Fault indicator deployment schematic	
GIS inputs	
CAD updates	
Hourly rate (T&M)	
Total	

MINIMUM QUALIFICATIONS

Delano Municipal Utilities (DMU) is seeking a long-term relationship with a reputable engineering firm with these characteristics:

- ✓ The qualified firm will employ at least one Professional Engineer who is registered in the State of Minnesota and qualified with distribution planning and analysis, substation design, power quality event analysis, primary distribution design and field staking.
- ✓ The firm shall utilize ESRI™ geospatial software to document and geo-tag locations and routing of all distribution assets. *DMU will incorporate all digital data into its data dictionary and shape file.*
- ✓ The firm shall utilize AutoCad™ to provide construction documentation and as-built drawings for projects. *All cad files shall become property of DMU.*
- ✓ The qualified firm shall have experience with generation, distribution and transmission projects and shall demonstrate competency with real-time modeling, electrical testing, GIS, SCADA, URD design, substation, OH transmission and plant design.
- ✓ The firm personnel shall work in coordination with DMU staff to familiarize themselves with the distribution system, collect data and inspect elements of the system. The personnel will follow all safety protocols and directives provided by DMU staff.
- ✓ The firm shall submit electric utility references giving specific acknowledgement to any Minnesota municipal utilities.

INSTRUCTIONS TO BIDDERS

Bidders may respond with either lump sum or line-item proposals, but preference shall be given to bidders who identify major costs of key elements in their engineering study.

Bidders will also be evaluated on municipal utility references.

Bidders may elect to provide pricing for select Project Deliverables (page 2).

Bidders are encouraged to illustrate internal engineering process and workflow on their bids for clarity and fair interpretation of each proposal.

All questions, comments and clarifications should be directed to key contact personnel listed below.

Bidders must respond in writing by **June 30th, 2019** at the address listed below.

KEY CONTACTS

Paul Twite
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